

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF THE CLAIMS

1. (Currently Amended) A method for metering and controlling the dispense rate of an in-mold coating composition into a mold cavity [(16)] and onto a thermoplastic molded article contained therein, the method comprising the steps of:

- (a) injecting a heated thermoplastic material into said mold cavity [(16)];
- (b) allowing said thermoplastic material to form a thermoplastic article in said mold cavity [(16)]; and
- (c) injecting an in-mold coating composition into said mold cavity [(16)] and onto said thermoplastic article, wherein both the amount of and rate that said coating composition is injected into said mold cavity [(16)] are controlled.

2. (Currently Amended) The method of claim 1 further comprising the step of maintaining mold members [(12,14)] that define said mold cavity [(16)] at a substantially fixed distance relative to one another throughout steps (a) through (c).

3. (Currently Amended) The method of claim 2 further comprising the step of maintaining said mold members [(12,14)] such that said mold cavity [(16)] has a substantially fixed volume in step (a) and the same said substantially fixed volume in step (c).

4. (Currently Amended) The method of any of claim[s] 1 [to 3] wherein said step of injecting said in-mold coating composition includes dispensing a first amount of said in-mold coating composition at a first rate sufficient to interpose said in-mold coating composition between said article and walls [(34,36)] defining said mold cavity [(16)] and dispensing a second amount of said in-mold coating composition at a second rate that is less than said first rate to avoid leakage of said in-mold coating composition through a parting line [(22)].

5. (Currently Amended) The method of claim 4 wherein the step of injecting said in-mold coating composition further includes dispensing a third amount of said in-

mold coating composition at a third rate that is ~~[[less]]~~ more than said second rate and sufficient to fully coat desired portions of said article.

6. (Currently Amended) The method ~~of any~~ of claim[[s]] 1 [[to 5]] wherein the amount of and the rate that said in-mold coating composition is injected into said mold cavity [[[16)]] is metered through the use of a linear transducer [[[110)]] in combination with a programmed logic controller.

7. (Currently Amended) The method ~~of any~~ of claim[[s]] 1 [[to 6]] wherein the control of the amount of in-mold coating composition injected includes the steps of:

using a hydraulic cylinder [[[102)]] with a piston [[[104)]] extending into a metering cylinder [[[64)]] of said in-mold coating composition to evacuate said in-mold coating composition from said metering cylinder [[[64)]] and direct said in-mold coating composition to said mold cavity [[[16)]]; and

measuring linear travel by said piston [[[104)]]; and

operating said hydraulic cylinder [[[102)]] based on said linear travel measured.

8. (Currently Amended) The method ~~of any~~ of claim[[s]] 1 [[to 7]] wherein the control of the amount of and the rate that said in-mold coating composition is injected includes the steps of:

measuring the position of a piston [[[104)]] used to force said in-mold coating composition into said mold cavity [[[16)]]; and

controlling the speed and distance said piston (104) travels based on measurements taken of said piston [[[104)]]].

9. (Currently Amended) The method ~~of any~~ of claim[[s]] 1 [[to 8]] wherein the step of injecting said in-mold coating includes:

dispensing said in-mold coating composition from a metering cylinder [[[64)]] through a fluid line fluidly connected to said mold cavity [[[16)]]; and

controlling the amount and rate of said in-mold coating dispensed from said metering cylinder [[[64)]]].

10. (Currently Amended) An apparatus for controlling the amount and rate of an in-mold coating composition injected into a molding cavity [(16)] and onto a thermoplastic molded article formed therein, comprising:

(a) at least two mold members [(12,14)] defining said mold cavity [(16)];
(b) a first composition injector [(30)] fluidly connected to said mold cavity [(16)] for injecting a first composition into said mold cavity [(16)];

(c) a second composition injector [(32)] fluidly connected to said mold cavity [(16)] for injecting said in-mold coating composition into said mold cavity [(16)], said second injector including :

(i) a metering cylinder [(64)] fluidly connected to said molding cavity [(16)] and holding said in-mold coating composition,

(ii) a hydraulically driven piston [(104)] extending into said metering cylinder [(64)] for evacuating an amount of said in-mold coating composition held therein upon movement in a first direction of said piston [(104)],

(iii) a means for controlling said amount of said in-mold coating composition evacuated by said piston [(104)] from said metering cylinder [(64)], and

(iv) a means for controlling the rate that said piston [(104)] evacuates said in-mold coating composition from said metering cylinder [(64)].

11. (New) The apparatus of claim 10 wherein said means for controlling said amount of said in-mold coating composition evacuated by said piston is a linear transducer operatively connected to said piston and to a programmed logic controller.

12. (New) The apparatus of claim 10 wherein said means for controlling the rate that said piston evacuates said in-mold coating composition is a linear transducer operatively connected to said piston and to a programmed logic controller.

13. (New) A method for metering and controlling an in-mold coating dispense rate, comprising:

injecting a heated first composition into a mold cavity defined between first and second mold members;

allowing said heated first composition to cool to form a molded article;
injecting an in-mold coating composition into said mold cavity and onto said molded article;
controlling a rate that said in-mold coating composition is injected into said mold cavity and onto said molded article; and
maintaining said first and second mold members at a substantially fixed distance relative to one another throughout said steps of injecting said first composition and injecting said in-mold coating composition.

14. (New) The method of claim 13 further including the step of maintaining the first and second mold members such that the mold cavity has a substantially fixed volume throughout said steps of injecting said first composition and injecting said second composition.

15. (New) The method of claim 13 wherein said in-mold coating composition is dispensed at a first rate sufficient to interpose between said molded article and walls of said mold cavity.

16. (New) The method of claim 15 wherein said in-mold coating composition is subsequently dispensed at a second rate that is less than said first rate to avoid leakage of said in-mold coating composition.

17. (New) The method of claim 16 wherein said in-mold coating composition is subsequently dispensed at a third rate that is greater than said second rate to fully coat desired portions of said molded article.

18. (New) The method of claim 13 further including the step of controlling an amount of said in-mold coating composition injected into said mold cavity and onto said molded article.

19. (New) The method of claim 13 wherein said step of injecting said in-mold coating composition includes:

moving a piston to force said in-mold coating composition from a metering cylinder into said mold cavity and onto said molded article.

20. (New) The method of claim 19 wherein said step of controlling said rate occurs by employing a linear transducer connected to said piston to measure travel thereof and employing a controller connected to said piston and to said linear transducer to control movement and travel of said piston thereby controlling said rate said piston forces said in-molding coating composition from said metering cylinder into said mold cavity and onto said molded article.